



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,966	01/05/2004	Hui Chun Hsu	OP-092000369	1862
46103	7590	06/10/2005	EXAMINER	
HDSL 4331 STEVENS BATTLE LANE FAIRFAX, VA 22033			WALBERG, TERESA J	
			ART UNIT	PAPER NUMBER
			3753	
DATE MAILED: 06/10/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/750,966

Applicant(s)

HSU, HUL CHUN

Examiner

Teresa J. Walberg

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-16 is/are allowed.
- 6) ☒ Claim(s) 1,3-8 and 10-13 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 4, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Lin (6,466,442).

Lin discloses a heat pipe having the claimed structure including a tubular member (11), having a first end connecting bottom portion and a second end connecting a lid, where the bottom portion can be used as a heat input surface (see Fig. 3), a wick structure including a base portion (61a) formed at the bottom portion of the tubular member and a surrounding portion (62a) extending from the base portion (61a) for attaching to an interior wall of the tubular member (11, see Fig. 5), the inner surface of the bottom portion being a plane surface (Fig. 5), the bottom portion being integrally formed with the tubular member (Fig. 5), and a first support member (62) mounted inside the tubular member (11).

3. Claims 1, 3, and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Garner et al (2005/0011633).

Garner et al disclose a heat pipe having the claimed structure including a tubular member (22), having a first end connecting bottom portion and a second end connecting a lid, where the bottom portion can be used as a heat input surface (see Fig. 1), a wick structure (8) including a base portion (12) formed at the bottom portion of the tubular member and a surrounding portion (8) extending from the base portion (12) for attaching to an interior wall of the tubular member (24, see Fig. 3), the bottom portion being integrally formed with the tubular member (Fig. 3), and the lid having a through hole for an injection tube (26, in Fig. 1) to fill working fluid.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (6,466,442) in view of Low et al (3,789,920).

Lin discloses a heat pipe having the claimed structure with the exception of a second support member including a curled resilient sheet with a plurality of holes. Low et al teaches using a curled resilient sheet with a plurality of holes in

a heat pipe to hold the wick in place and keep it from sagging. It would have been obvious in view of Low et al to use a curled resilient sheet with a plurality of holes in the heat pipe of Lin, the motivation to better hold the wick in place.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garner et al (2005/0011633) in view of Waters (3,720,988).

Garner et al disclose a heat pipe having the claimed structure with the exception of a skirt structure with a plurality of frills. Waters teaches using a heat pipe wick having a skirt structure with a plurality of frills. It would have been obvious in view of Waters to use a skirt structure with a plurality of frills in the heat pipe of Garner et al, the motivation to enable easier assembly as taught by Waters.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garner et al (2005/0011633) in view of Corman et al (3,955,619).

Garner et al disclose a heat pipe having the claimed structure with the exception of the wick structure having strips. Corman et al teach using a strips on and wick for a heat pipe. It would have been obvious in view of Corman et al to use strips on the wick of the heat pipe of Garner et al, the motivation to enable control of the temperature drop as taught by Corman et al.

8. Claims 14-16 are allowed.

Art Unit: 3753

9. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Applicant's arguments with respect to claims 1, 3-8, and 10-13 have been considered but are moot in view of the new ground(s) of rejection.

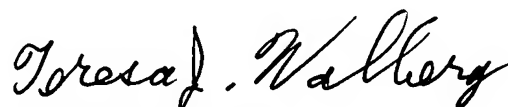
11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chang, Chao et al, and Tajima are cited to show heat pipes with heat input from a lower surface.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on 571-272-4930. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3753

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Teresa J. Walberg  
Primary Examiner  
Art Unit 3753

tjw